MODIS Technical Team Meeting
Thursday, November 15, 2001
Building 33, Room E125
3:00 pm

Vince Salomonson chaired the meeting. Present were Jack Xiong, Dorothy Hall, Ed Masuoka, Mark Domen, Eric Vermote, Barbara Conboy, Steve Kempler, Skip Reber, and Bruce Ramsay, with Rebecca Lindsey taking the minutes.

1.0 Upcoming meetings

- MODIS Data Processing Review Meeting — December 11-13, 2001
  NASA-GSFC
- AGU Meeting — December 10-14, 2001
  San Francisco, CA
- MODIS Science Team Meeting — December 17-19, 2001
  BWI Marriot

2.0 Meeting Minutes

2.1 Instrument Update

Domen reported that command processor-A (CP-A) was removed from Aqua MODIS on 11/1, and were put through a series of tests. A special team went out to Santa Barbara Remote Sensing to help troubleshoot the cards. They discovered that what caused the resets was a noisy clock line in the wait-state generator. By modifying the filter circuit, they were able to make it reset-free to –35°C. They are now in the process of making a permanent change to the card, which will be tested and ready to be reinstalled at the next opportunity.

The immediate plan, which is tentative, is to remove cards for formatter A and rework them next Tuesday, November 19, 2001. Then November 26-29, there is a mission test simulation, for which MODIS will use B-side formatter and command processor. After that test, about November 30, they will remove B-side CP and formatter, and reinstall A-side cards. They plan to fix the B-side cards and reinstall before December 15, when the final comprehensive performance test is done. Then, MODIS should be free of reset problems on all command processors and formatters. Domen said that we are still on schedule for a March 24 launch. These modifications should not impact schedule. All tests will be done with whatever components are in the instrument at the time.

Xiong reported that with respect to MCST's comprehensive analysis of the SWIR leak assessment. Their finding is that Aqua MODIS thermal leak is smaller, and the subframe differences are also smaller. This will make calibration much easier, hopefully not a lot of corrections needed. One thing that he hadn't realized before is that when they pull out the command processor-a and b boards, they replaced a noisy resistor. This will affect calibration for thermal sensor coefficients. Not sure how serious, but it will be an issue. He will talk to Santa Barbara Remote Sensing, and hopefully they can easily provide a new set of coefficients. [Note added in proof: After the meeting, Jack has raised this issue

to SBRS and was told that the coefficients won't be affected due to the work on the CP noisy clock line.]

It appears that Aqua MODIS is improved over Terra except for Bands 5 (1 dead detector) and 6 (7 dead detectors).

Xiong reported that MCST has not yet come up with an aggregation approach for adjacent detectors for the Aqua L1B code. Also, since we have finished the complete year, we will reduce the Solar Diffuser calibration to once every two weeks. This was a planned reduction to preserve lifetime door openings, but we had held it off because of complete year processing.

2.2 Data Processing

Kempler reported that the DAAC is around 12.5 days behind leading edge. They are still aiming for December 21 to finish reprocessing. Unplanned downtime has caused a slip and he will talk to Mike Moore about the issue. He asked Greg Leptoukh to talk to Robert Wolfe about the issue of QA flags being set to validated, and asked Jim Acker to call Esaias. Alice Isaacman is working on turning off production of the night mode granules collected at 250 m. He is thinking of putting a button on their site that links to a presentation that will step users through MODIS data ordering, pointing out tools and ordering tricks, etc.

Masuoka reported that reprocessing is complete through about day 216. Days 208 and 209 may remain incomplete due to data gaps. On mtvs1 they have had two problems. Through 296, there is missing DAO late-look data for Steve Running's product. The DAAC has requested the data, but it is not in yet. Also, since 11/8/01 there has been a request for ancillary flight dynamics data. The DAAC requested it, but the flight dynamics distribution disk crashed, and they can't get the data. There is a hole in the middle of the day, and they can't close a 16-day period. For land, MODAPS would like to close at 83% if the team would agree could. Atmosphere and Oceans have given the OK to could go ahead on that day.

Vermote asked if there weren't an alternative to the ephemeris data. Masuoka said that they could switch to the alternate profile on L1. This might impact geolocation a bit.

Masuoka reported that they are working on 323-348 (2000) for SAFARI. They are starting on Atmosphere and Land L2 while we wait for some PGEs. Masuoka said that there would be a meeting 11/16/01 on the issue of the leaky pipe from the PDR server to the DAACs. The DAACs have trouble tickets in for bad pans and problems with delivery notices. Glen Iona or Mike Moore will chair the meeting. Masuoka explained that MODAPS used to hold data on disc until it got a pan. But then they were holding onto tons of data while we waited for bad pans that never came. So they had to delete some data, and now are missing some files. So the meeting will look at SIPS interface and other issues.

Reber asked what kind of data loss was occurring. Masuoka said it varies among DAACs, but has been as high as 1.7%. Reber said he had heard about the issue of data loss and the leaky pipes at another meeting and would let the group know if he found out any more information.

Masuoka also commented that when he sent the report on volumes to Dolly Perkins, he included a note about WAN problems on center that cut throughput rates.

2.3 EOSDIS Update

Reber asked Kempler about problems at the GDAAC because his staff hadn't been able to access data for some time. Kempler replied that they had had some scheduled and unscheduled downtime, and that anyone having trouble getting should immediately contact user services. Masuoka added that as part of Center's testing of IT security, there have been issues with the Building 32 network.

Reber said they were still looking into the issue of whether a flag or something needs to be set in the data itself to indicate data quality (i.e., beta, provisional, or validated). The point he raised is that there is information in the metadata from the DAAC that shows the science quality flag as "not investigated." Reber has changed the appropriate products to "validated" on his web page, but that is inconsistent with the DAAC. Esaias explained that the information must come from the metadata. Since data can only be declared "validated" retrospectively, the default is "not investigated." To change that flag, we will have to update metadata, which will take months or years since there are no good tools for bulk updating—each granule has to be done one at a time. Esaias thought that a bulk update tool might not be available until next summer. (Note added in proof: An update tool should be available in February 2002.)

Salomonson suggested that for now, we make sure our web pages reflect the validated status, and perhaps remove the button at the DAAC web page.

2.4 General Discussion

Salomonson reported that Jon Ranson has gotten close to consensus on the updated product quality definitions, and he wants to put it on Reber's site, then the MODIS web site. These new definitions should help clear up any confusion about the usefulness of the products.

Salomonson reminded the group that the special issue *Transactions on Geoscience and Remote Sensing* (TGARS) on Aqua that Claire Parkinson is putting together is underway, and the input has to be in by late March. He will be contacting those that committed to providing papers for this special issue to make sure they are aware of the schedule.

With respect to software release, Salomonson met with Diana Cox and Larry Watson. Watson is very helpful. There is a question about who will be the recipients, and the thinking now is to have an organizational release as opposed to a release by individuals.

This will overtly commit an organization to accepting responsibility for the terms of the agreements.

Salomonson has informed Jim Dodge of NASA HQ about the Science Team meeting and indicated to Dr. Dodge, if he wishes to encourage such, that the Direct Broadcast community has an open invitation to the science team meeting.

2.5 Cryosphere Update
Hall reported that she gave a seminar at NOAA on the MODIS snow product work. The presentation and attendant discussion seemed to go quite well.

2.6 NOAA-NESDIS Update
Ramsay thanked Hall for the seminar, and added that it was a full house. Modelers, operations staff, and the snow mapping community asked lots of questions. He provided a postscript at the meeting on NOAA plans to do MODIS data in near real time. Office of system development has agreed to fund a prototype MODIS Land Rapid Response and volcanic ash initiative. Part of the intent with that is to substitute MODIS 12-micron channel for a GOES channel, which was lost, but also to establish a MODIS volcanic ash product stand-alone.

2.7 Land Update
Vermote reported that he has begun work with the DAAC on porting the surface reflectance code for Direct Broadcast. They plan to work the code, to see what sorts of issues arise, and then they will develop appropriate manuals and documentation, etc.

2.8 Oceans Update
Esaias reported that the new delivery from Miami is in and they are trying to get it in production. We are working on a strategy for doing the necessary reprocessing to correct the data affected by the incorrect sun-earth distance calculation.

3.0 Action Items

3.1 Justice to contact Bob Whacker.
3.2 Ramsay to forward Justice an email from him.
3.3 Discipline leads to meet to resolve the issue of beta-release code and science-quality code, and what we need to say about it.
    Status: Open.
3.4 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.
    Status: Open.